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A continuous analogue of the invariance principle and its almost sure version

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Abstract

We deal with random processes obtained from a homogeneous random process with independent increments by replacement of the time scale and by multiplication by a norming constant. We prove the convergence in distribution of these processes to Wiener process in the Skorohod space endowed by the topology of uniform convergence. An integral type almost sure version of this limit theorem is obtained.

Keywords

Almost sure limit theorem, Functional limit theorem, Process with independent stationary increments